EFFICIENCY2.0

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November 24, 2009

Federal Communications Commission
445 12th Street SW
Washington DC 20554

RE: Proceeding 09-51: National Broadband Plan Notice of Inquiry

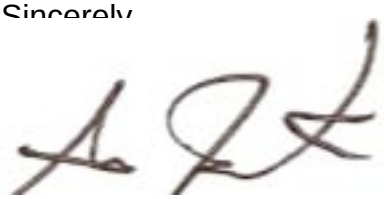
Efficiency 2.0 submits the following comments to the Federal Communications Commission ("FCC") in the response to Proceeding 09-51: National Broadband Plan Notice of Inquiry. These comments may also apply to Proceedings 09-47 and 09-137.

Efficiency 2.0 provides energy efficiency programs and software solutions for utilities, governments and other organizations seeking to engage residential and small business customers through sophisticated marketing and online tools. We have spent over four years developing advanced energy end-use software, capable of giving consumers personalized energy recommendations based on any level of information.

Our software is licensed by utilities, governments, community groups and other organizations to help meet energy efficiency goals through consumer behavior change. By tracking consumer energy bills, we are able to measure the effect our software tools and associated program strategies (community marketing, incentives, etc.) have on usage. Clients also use our software to integrate existing programs (rebates, customer education, in-home audits, etc.).

We appreciate the opportunity to submit comments regarding the future of the smart grid in general and real-time data in particular. The decisions made today will have a tremendous effect on the consumer benefits of advanced metering investments that we strongly believe are possible.

Sincerely



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Efficiency strongly believes that the promise of the smart grid ultimately lies in large-scale consumer engagement. While there are many non-consumer benefits of smart grid, the large investments in infrastructure will achieve maximum potential when consumers are able to make energy decisions based on real-time energy data. We therefore believe the development of the smart grid must follow these principles:

- **Open network standards** that allow third-parties equal access to real-time energy data;
- **Standardized data formats** that reduce integration costs for all utilities and vendors;
- **Real-time data** that can be sent through multiple communications channels, including internet protocols.

These principles are important if the smart grid is to motivate real-time energy decisions. Behavioral science has conclusively demonstrated that consumers will change their energy patterns when given more granular data. Creating a smart grid that maximizes the amount of useful information given to consumers should therefore be the goal of the FCC as it generates the National Broadband Plan.

Comments on the specific questions raised in the public comment request with regards to real-time data are below.

(a) In current Smart Meter deployments, what percentage of customers have access to real-time consumption and/or pricing data? How is this access provided?

While Efficiency 2.0 does not have specific numbers on access to real-time data, our experience is that real-time data is not yet common in smart meter deployments. Where it is available, it is usually provided through an in-home display.

(b) What are the methods by which consumers can access this data (e.g., via Smart Meter, via a utility website, via third party websites, etc.)? What are the relative merits and risks of each method?

Consumers can typically access real-time data through in-home displays. They can also access interval data on a daily basis via a utility website. Currently, there are very few third party websites that communicate real-time data. Real-time data via the web is relatively minimal because of batch processing used by most utilities. In-home displays can have a powerful effect on energy behavior, but they remain expensive compared to other means of communication, and consumers have not shown a high willingness to pay to date. Please reference the article below for more information on this issues:

http://earth2tech.com/2009/10/26/why-the-smart-grid-needs-to-ditch-batch-processing-now/

(c) How should third-party application developers and device makers use this data? How can strong privacy and security requirements be satisfied without stifling innovation?

Third-party application developers should use this data to give consumers better information about their energy choices. Commercial applications include analysis to find a better rate plan, similar to how Mint.com or other online tools analyze financial records to recommend specific credit cards and financial products. Similar to Mint.com, privacy should be strong, but flexible. Regulators should recognize that there are two levels of energy security: grid-level and individual. At the grid level, security standards should be extremely high for national security reasons. At the individual level, security standards should be as strong as financial security standards.

(d) What uses of real-time consumption and pricing data have been shown most effective at reducing peak load and total consumption?

Real-time consumption and pricing data have shown various levels of efficacy. The most comprehensive study to date was conducted by Sarah Darby on energy feedback. While the average impacts were high, there was a wide range suggesting that other effects are equally, if not more important than real-time usage. These effects include personalized savings information, goal-setting, and social comparisons. And so while real-time energy data is not a silver bullet, it can amplify other approaches to energy behavior change.

(e) Are their benefits to providing consumers more granular data?

See above in terms of benefits of providing consumers more granular data. As in all other realms, however, more granular data has always been strongly correlated with material changes in consumer behavior. As granular energy data has not yet been utilized in a mass scale with an ecosystem of applications, it remains to be seen the exact magnitude of consumer behavior effects.

(f) What are the implications of opening real-time consumption data to consumers and the energy management devices and applications they choose to connect?

Consumers today expect real-time data and device control in every aspect of their life. Contrary to much industry and policy speculation, many consumers do not see real-time energy management as something futuristic or scary. Rather, they wonder why it did not come sooner. They can control their DVR from their cellphone, reserve a car via text message, and shop for cars on their iPhone. Dynamic energy management is simply a continuation of technology control. To consumers, this should be the world of the present, not tomorrow.